USAWC STRATEGY RESEARCH PROJECT

**FUNCTIONAL MANAGEMENT OF LOGISTICS DATA:
TIME FOR A SINGLE MANAGER**

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ABSTRACT

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There is a need for a single functional logistics data manager within the Army to eliminate the continued stovepipe management of logistics data. The lack of a single functional logistics data manager can lead to the potential failure of the emerging logistics information systems across the service; the incompatibility of developing systems with the emerging Department of Defense Logistics Architecture; and keeping combatant commanders from gaining required capabilities in the areas of materiel readiness, asset visibility, and intransit visibility, with a reduced logistics footprint. This paper will define the role of a functional logistics data manager within the service; look at the emerging logistics architecture, automated logistics systems in development to support this architecture, and the players who could fill the role.

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FUNCTIONAL MANAGEMENT OF LOGISTICS DATA:
TIME FOR A SINGLE MANAGER

Logistics is a critical support process for the Future Force. This includes providing combatant commanders with timely, relevant and actionable logistics information and allowing the national logistics system to respond to demands without a delay in passing requirements. A responsive and information-enabled logistics system will meet the information requirements of Focused Logistics under Joint Vision 2020 and the smaller logistics footprint required by Army Transformation. A requirement of the emerging logistics enterprise is timely actions taken without review at each level of the system. This is possible if required information is known and shared within the enterprise. The capability to share information across the logistics enterprise depends upon common functional data definitions, business process metrics, and a single Army agency charged with enterprise functional data management. Responsibilities include both managing existing logistics data and the entry of new data elements into the enterprise.[1] The lack of a single functional logistics data manager can lead to the potential failure of emerging logistics information systems. A potential problem is the incompatibility of data within the developing systems and with the emerging Department of Defense Logistics Architecture. Failure will keep combatant commanders from gaining required capabilities in the areas of materiel readiness, asset visibility, and in transit visibility. Failure also will keep us from achieving the reduced logistics footprint required by Transformation. A sample view of the developing Army Logistics Enterprise is shown at Figure 1.

This paper will explain the difference in roles of a functional data manager and technical data manager, discuss the current logistics enterprise for DOD and the Army and functional data management within this enterprise, and discuss the developing logistics architecture and enterprise.   Also, it will provide a review of ongoing actions that will drive the decision for assigning a lead Army functional logistics data manager and provide a recommendation for this role.
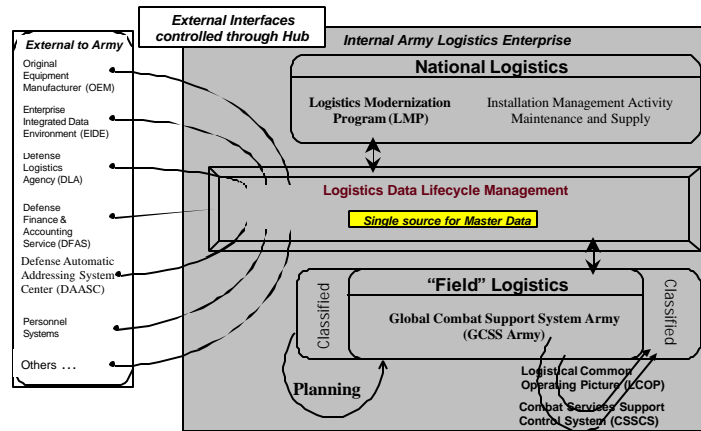
High-Level Logistics Architecture

FIGURE 1 HIGH LEVEL LOGISTICS ARCHITECTURE[2]

Functional management of logistics data is spread across Army system development and operating activities ranging from the Program Executive Office for Enterprise Information Systems (PEO EIS) to Army major commands, to include the Army Materiel Command, to weapon system developers. Each community defines and manages data to meet its user community needs and requirements. Limited logistics data, such as logistics management data (unit of issue, unit price, weight and cube) found in the Army Master Data File, is common and effectively centrally managed across both the Army and DOD.[3] Functional management of logistics data differs from the technical management of the same data. Technical management is concerned with the ability to create, store, and transfer data within or between information systems. The functional manager is concerned with data quality and fitness for use in making logistics decisions. Data administration, outlined in DOD Directive 8320.1, DOD Data Administration and Army Regulation 25-1, Army Information Management, deals with developer responsibilities for managing data with respect to business rules and data models but does not include managing the relationships between data – that is, how do you link data to create information. The DOD Directive defines objectives to improve mission performance with data that is accurate, timely, and shared between systems horizontally and vertically and within the government and with private sector organizations.[4] Lacking is the definition of responsibilities for the quality management of data and information between existing and developing systems

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and the interfaces between functional community systems (e.g.- logistics, financial, force management, personnel). People add the value to the data to make it actionable information or information that tells us something. Today we do not have clear lines of authority that define functional management roles and identify responsibilities for determining relationships between data, data elements, and the logistics related information that can be derived from data.

Managing data functionality is a proven enabler for improved decision-making, reducing resource requirements, and shortening cycle times to improve customer response times. Examples in the commercial world include companies such as IBM and the increase in business solutions incorporating Supply Chain Management (SCM)[5], or enterprise resource planning (ERP) solutions (or both). Within the Army, the Distribution Management Program (formerly the Velocity Management Program), has worked to improve cycle times between the disparate logistics systems existing today.[6]   The Army has improved response times in meeting customer demands but must now take the next step it make further improvements and enable a 21st Century logistics enterprise. We must meet DOD and Army Transformation goals and provide for seamless transfer of logistics data supporting decision making and managing the quality of logistics data and support.

FUNCTIONAL DATA MANAGEMENT COMPARED TO TECHNICAL DATA MANAGEMENT

The functional data manager differs from the technical data manager in the concern with the value of data and value added information compared to data standards and rules to improve technical administration, data base administration and performance, and the technical transfer of data between automated systems.

The functional logistics data manager works to improve business performance and the value information adds to the logistics processes. This includes the following areas.

- What logistics data elements will exist within the enterprise and what values can be assigned to the data elements.
- Where is the source or point of origin of the data values, i.e. – what system will serve as the master data record (will they be assigned by the system or will values come from other systems).
- Who is the responsible owner for the data used in the enterprise architecture and by other systems to avoid conflicting values and data.
- When is the data updated, how, and who is responsible for the update. The enterprise will have two primary types of data: master data (does not change with operations) and dynamic data (changes with operations).

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- How the data is manipulated for value-added metrics and logistics information; this includes the relationships between data elements (e.g.- what is an asset's value? assets x approved price or acquisition cost).
- Overseeing this is data quality management – ensuring that data within the enterprise and passed to other systems or to external systems (as well as inbound data) is correct, relationships within the enterprise are valid to provide the needed answers, and problems are identified with resolution authority assigned and actions tracked to remove inconsistencies and bad data.

Technical data management deals with the day-to-day information systems processing actions for managing the data within the system and system interfaces with external systems. Technical data management monitors and manages data interfaces and gateways without regard for assigned data values. Technical data management would identify data values that do not meet defined edit criteria but not bad data in terms of poor quality or inconsistent values. For example, a common problem is incorrect unit price. Suppose the recorded unit price for a widget is $100 but should be $1.00. The value is technically correct and the enterprise would use the data value of $100. However, for functional data managers the value would be incorrect and requires correction at the source before use in billings, asset valuation, and similar functional activities. How many of us would like to pay $100 for a $1 item?

FUNCTIONAL LOGISTICS DATA MANAGEMENT TODAY

Functional logistics data managers today are spread across multiple commands, program executive offices, and individual Army activities each acting in response to their own requirements and customer needs. Examples of the multiple managers today are shown at Table 1 and Table 2.[7] Each automated system and system manager uses standard data elements where possible and develops new data elements or merges data into information based upon their individual agency/office and user needs. Each is responsible for its data management and for ensuring data elements and definitions fit within the Army Enterprise Architecture – i.e., the data 'fits' technically within the system. Standard Army automated logistics systems are managed by two primary activities today. The Program Executive Office for Enterprise Information Systems manages tactical logistics and transportation systems and the Army Materiel Command manages national logistics systems. Weapon System Project and Product Managers (PM) engaged in weapon system life cycle management are actively involved in all phases of functional logistics management. The weapon system PM is the entry point and manager for logistics data from industry during system development. This includes

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life cycle logistics management data related to the platform (e.g.-Electronic Technical Manuals and Interactive Electronic Technical Manuals, maintenance data, part number data) and operating concepts to gather logistics data during operations (e.g. – automated log book). This data is stored in standard logistics system stovepipes not easily accessed within the enterprise and often copied to other automated systems. The inabilities of the standard Army logistics systems to manage needed logistics data at and from the system or platform have put many weapon systems managers into the logistics data system development and management role. These systems are deployed across the Army in support of platforms and can be in conflict with standard systems. Army major commands have developed unique logistics systems to manage logistics functions not supported by standard systems. Examples include the Forces Command (FORSCOM) Financial and Logistical Interface Program (FINLOG). Finally, combatant commanders and staffs have a requirement for timely integrated logistics data from multiple sources. Programs such as the Joint Total Asset Visibility program provide limited integration of latent data from today's legacy automated systems.

System Name	System Developer	Purpose	Users
Logistics Modernization Program (LMP)	Army Materiel Command (AMC) Communications-Electronics Command (CECOM)	National Level Logistics Management providing "…an integrated logistics management capability that enables total asset visibility; velocity management; enhanced decision support; a collaborative planning environment; a single, actionable source of data; improved forecasting accuracy; and real-time, easy access to enterprise wide information."[8]	AMC and Army national level managers
Commodity Command Standard System (CCSS)	AMC (CECOM)	Standard system for managing and integrating materiel acquisition and management processes. CCSS is being replaced by LMP.	AMC national level managers
Standard Depot System (SDS)	AMC (CECOM)	Standard system for managing industrial based activities (e.g.- depots and ammunition). SDS is being replaced by LMP.	AMC industrial activities
Global Combat Service Support System – Army (GCSS-A)	Program Manager – Logistics Information Systems (PM LIS) of PEO EIS	GCSS-A is the developing Army CSS information system to replace legacy logistics systems. "The new system will encompass personnel, financial, medical and other non-logistics Combat Service Support functions."[9]	Army tactical units and organizations
Unit Level Logistics System (ULLS)	PM LIS	Unit Level Logistics System (ULLS) consists of software and hardware which: automates the logistics system for unit supply, maintenance and materiel readiness management operations. ULLS is to be replaced by GCSS-A.	Army tactical units
Standard Army Retail Supply System Objective (SARSS-O)	PM LIS	The SARSS-O system supports retail supply operations and management. SARSS-O is to be replaced by GCSS-A.	Army tactical and retail supply organizations
Standard Army Maintenance System (SAMS)	PM LIS	Automates maintenance shop operations, maintenance supply operations, and maintenance management functions at all intermediate maintenance levels	Army tactical and retail maintenance organizations
Logistics Integrated Data Base (LIDB)	AMC : Logistics Support Activity (LOGSA)	LIDB stores wholesale and retail historical information and provides real-time status of Army readiness, requisition, supply, maintenance and asset information to customers worldwide.	All Levels of Army

TABLE 1 SAMPLE STANDARD ARMY NATIONAL AND TACTICAL LOGISTICS SYSTEMS

SYSTEM NAME	SYSTEM DEVELOPER	PURPOSE	USERS
Business Systems Modernization (BSM)	Defense Logistics Agency (DLA)	DLA initiative to replace its legacy business systems and processes with a new and modern enterprise resource planning system. [10]	All Levels of Army
Financial and Logistical Interface Program (FINLOG)	Forces Command (FORSCOM)	Initially developed for the purpose of tracking credits for returned serviceable and unserviceable supply items. Its capabilities have grown to include a full array of linkages between Army supply and financial systems.[11]	FORSCOM, US Army Pacific, and US Army Europe
Transportation (multiple)	PM-Transportation Information Systems of PEO EIS	The PM is developing/maintaining a series of transportation related system that interface with the Global Transportation Network (GTN) and US Transportation Command. Includes: Transportation Coordinator Automated Information for Movement System II and Transportation Coordinator Automated Command and Control Information System	Active Army and reserve elements down to and including Installation Transportation Officers/Transportation Management Officer
Common Transitional Enterprise System – Aviation	PEO-Aviation	This system is a transition system for PEO Aviation and subordinate PMs who are operating their own stovepipe unique systems today. The objective system is to provide the PEO a common architecture to bridge the gap between the airframe and logisticians until the fielding of GCSS-A.[12]	Aviation units, aviation mangers at unit, intermediate, and national levels.

TABLE 2 SAMPLES OF OTHER LOGISTICS SYSTEMS

This decentralized management process provides for responsive systems at the individual level to meet unique user needs but impacts the effectiveness of the Army Logistics Enterprise. The proliferation of systems causes two major problems with master logistics data shared across the Army Logistics Enterprise. First, the master data is trapped in stove-piped system silos and data must be synchronized across the enterprise. Synchronized data means multiple copies of key data can exist in separate systems. Problems include clouding the authoritative source for standard data, receiving differing, incomplete, or wrong logistics information based upon incomplete or inaccurate data, and providing bad data to managers or other systems. Master data that should be common across the Army Enterprise can have different values because of mismatched cycles with the authoritative source. An example would be unit price information. The authoritative source is the Army Master Data File and is distributed monthly to sites worldwide. If a system administrator should miss a monthly file update or run his update at

the wrong time, his data will be out of synch with the authoritative source and the rest of the Army. Second, the danger of having data with the same or similar data names but different values (whether by definition of the data element or update frequency) is that you can generate different answers to critical questions. For example, if you needed the latest visibility information on the location of a required repair part on the Division Authorized Stockage List. You may have a status locally from your supply support activity of "BB" or backordered based upon local information and non-availability of the part locally. The national level system may have already received the requirement and released the item reflecting a status of 'Shipped' from the depot. The transportation system might know through the Global Transportation Network that the part was shipped on Julian date 4008 (8 Jan 2004) from the depot, routed through the aerial port at Dover Air Force Base and received at the Aerial Port of Debarkation in Kuwait on 4012 (12 Jan 2004). Asking the same question of the Army Materiel Command (AMC) Commodity Command Standard System (CCSS) could tell you similar information to the point of shipment but no further as CCSS only tracks items to point of shipment from the depot. Using the Army Total Asset Visibility capability within the LIDB with its batch feeds from the DOD logistics systems, you would learn that the repair part requirement was received at the Communications-Electronics Command on 4007, released to the Defense Depot Susquehanna on the same day, and shipped to Dover AFB on 4008. Further, it was flown from Dover AFB on Julian Date 4010 and receipted at the Aerial Port of Debarkation in Kuwait on 4012 and forwarded on to the Theater Distribution Center. With multiple sources and values based upon the system being queried and its design, the same question can generate different answers but each answer is correct based upon the system queried for data

Similar problems have been identified and reported in various venues. One player is the Army Audit Agency (AAA) with its data and logistics information reviews. In its report on Maintenance Data Integration, (AAA Audit Report A-2003-0255-AMM) in May 2003, AAA identified the need for integrated authoritative data between the systems, elimination of duplicative data warehouses and competing data storage and integration plans, and real time data sharing between key logistics players – from the combatant commanders back to the materiel sustainment and development communities.[13]

ROLES AND IMPACT OF A FUNCTIONAL LOGISTICS DATA MANAGER

What would a functional data manager do for the Army? The functional data manager has several key roles within the Army Logistics Enterprise. Migrating from multiple stove piped logistics systems to a smaller number of integrated enterprise systems requires inconsistent

data be identified, the authoritative source identified and data in transitioning systems cleansed. Additionally, rules must be in place for adding new data elements to the system. Therefore, the key functions of the functional logistics data manager are --

- Data Quality Management within the Army Logistics Enterprise and between other Army and DOD systems;
- Identification of the authoritative source for Army logistics data to harmonize data between Army systems and external agencies; and
- Developing, maintaining, and managing system level metrics.

Logistics data managed at the enterprise level can be both synchronized and harmonized to eliminate conflicting data, correct bad data, and provide a single view of for all users and managers. Impacts of assigning a single functional logistics data manager for the enterprise are shown below. In Figure 2, logistics data enters the enterprise early in the weapon system life cycle. Emerging technologies embed and transfer data in support of automated diagnostic programs and evolving logistics processes. The combatant commander is provided real time logistics data and information supporting battlefield and sustainment operations.
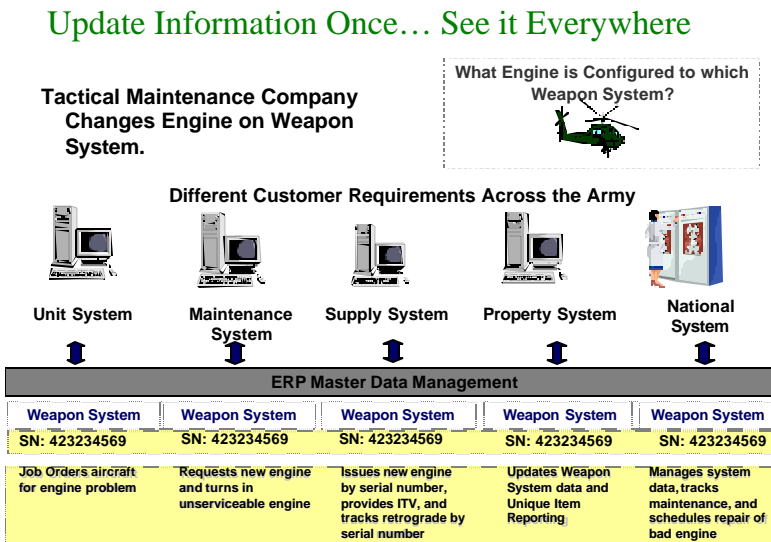

FIGURE 2 MANAGING DATA AT THE ARMY LOGISTICS ENTERPRISE[14]

Support to the enterprise occurs across the life cycle of a weapon system and includes capabilities identified in Figure 3.

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Enterprise Support Capabilities

- **Support existing contract requirements.**
- **Convert legacy data formats from original equipment manufacturers.**
- **Provide full file and change only data interface capability to ERP systems.**
- **Perform data cleansing, validation, and verification prior to making data delivery to ERP systems.**
- **XML Data Interchange for Logistics data – legacy and future**
- **Interactive Electronic Technical Manual Support, XML Data Interchange.**
- **Develop integrated logistics support data.**
- **Plan for Total Life Cycle Systems Management (TLCSM) and build it into weapon system designs.**
- **Perform Logistics Data Analysis.**
- **Satisfy reporting requirements.**
- **Provide formats for Joint Service and International data interfaces.**

FIGURE 3 ARMY LOGISTICS ENTERPRISE SUPPORT [15]

EXAMPLES OF WHERE THIS HAS WORKED

Commercial industry has a financial incentive to improve their business practices and processes. Companies identify process gaps and develop business solutions to improve customer response and reduce costs in improved business processes. Commercial improvements include reduced inventory costs (one time), reduction in suppliers/vendors, reduction in warehousing (locations and quantity), and improved velocity and visibility for customer satisfaction. New or improved capabilities include made to order products with short manufacturing cycles (think Gateway and Dell Computers) with little or no final product inventory on the shelf or in distribution channels.

One published case is IBM and its recently established Integrated Supply Chain to centrally manage functions from procurement to customer fulfillment. IBM formalized its logistics data management across independent product divisions operating unique supply chains and running 16 manufacturing plants in 10 countries supported by over 33,000 vendors providing over 2 billion parts per year. The Integrated Supply Division cut costs in 2002 by $3 billion by standardizing parts naming, vendor identification and management, and focusing on functional integration of data. Process improvements accounted for $900 million of this amount while improved supplier deals accounted for another $1 billion. The increased visibility of stocks

allowed reduced inventory and improved supplier management. In one case a single supplier supported multiple IBM divisions with each assigning its own forms, product numbers, and managing purchases and stock for a common item which was replaced with a single chain and manager.[16]

The Army Property Book Unit Supply Enhanced (PBUSE) being deployed by PM LIS and LMP deployments within AMC are examples of functional data management improvements improving Army data integrity and business processes. PBUSE is breaking new ground using a common data warehouse and the Army Knowledge Online architecture. Also, PBUSE is using a common file with DOD Activity Address Codes (DODAAC) and Unit Identification Codes (UIC) from the Logistics Integrated Data Base. Serial Number and unique identification data is being cleansed and data integrity improved across the logistics enterprise with the cooperation and commitment of both PM LIS and LOGSA to a single standard for functional data management. The LMP is breaking down traditional barriers to data management and identification of a single national level authoritative source. The use of enterprise software and processes is requiring a Master Data Record for each NSN and the relationships between processes require a single authority.

DEVELOPING LOGISTICS ARCHITECTURE AND KEY PLAYERS

The DOD, Army, and other services/agencies are incorporating technology developments to improving business processes. The Director of Logistics (J4), Joint Chiefs of Staff, is defining requirements to meet combatant commander needs for timely, relevant, and actionable information and has published the "Focused Logistics Campaign Plan" for improved asset and intransit visibility in support of Joint Vision 2020. Joint Pub 4-0 outlines the requirements for interoperability and joint capabilities within the logistics enterprise. Outlined in Joint Pub 4-09, Joint Doctrine for Global Distribution, is SCM to improve service capabilities to support combatant commanders. SCM improves efficiency with modern business practices within DOD and is defined as, "…a cross-functional approach to procuring, producing, and delivering products and services customers."[17]

The Force-centric Logistics Enterprise (FLE) (formerly the Future Logistics Enterprise) is the DOD road map to improve business practices, gain efficiencies and implement modern processes with the objective to, "…ensure consistent, reliable support that meets warfighter requirements through enterprise integration and end-to-end customer service."[18] The Deputy Undersecretary of Defense for Logistics and Materiel Readiness has published its "Future Logistics Enterprise" initiative document and the "FLE: Roadmap to Transformation" with

established the goals, milestones, and management structure for developing a DOD logistics enterprise architecture with oversight through the Joint Logistics Board.[19] The architecture requires clear functional data identification and data management roles to meet the requirement for harmonized data, the ability to flow requirements across the enterprise, and report enterprise level metrics (e.g.- Customer Wait Time, Global Available To Promise, Time Definite Delivery) and capabilities (Total Asset Visibility, In transit Visibility) in an integrated DOD enterprise. Assigning the U.S. Transportation Command as the single Distribution Manager for DOD furthers supports SCM and assigning ownership to processes and data.[20] The Army G4 published "Army Logistics Transformation" of February 2003 provides a framework for managing, integrating, and synchronizing the developing logistics initiatives. The document lays out roles and processes to manage initiatives but does not provide for a single point of ongoing functional logistics data management within framework

The Army, the Defense Logistics Agency, and other services are developing and deploying ERP software solutions and implementing best commercial practices to replace legacy logistics information systems over the next 3-7 years. The ERP systems comply with guidance laid out by the FLE. Also, they support joint interoperability requirements and doctrine outlined by the Director of Logistics (J4).

Within the Army, the developing Army logistics architecture and shared data environment includes three major pieces.

- Logistics Modernization Program (LMP) replacing national level systems and managing select logistics functions (supply and maintenance) down to the installation and division (Authorized Stockage List (ASL)). [21]
- Global Combat Support System-Army (GCSS-A) replacing legacy logistics automated systems (e.g. – SARSS, SAMS, ULLS) at the tactical level (division and below).[22]
- The Logistics Integrated Data Base (LIDB), a non-ERP system, completes the Army architecture and serves as a national level data warehouse collecting operational level logistics data (supply and maintenance operation data from the tactical Army, readiness data). Additionally, LIDB serves as the Army conduit for logistics management data passed between the Army and the Federal Logistics Information System (FLIS) managed by the Defense Logistics Agency. [23]

As shown in Table 3 there are a number of DOD and Army players with specific roles in developing and managing the Logistics Enterprise.

Level	Agency/Command/Office	Role
DOD	DUSD (L&MR)	Lead DOD office developing the logistics enterprise architecture across all services and defense agencies. Ensures systems provide interoperability and support to combatant commanders. This office has several key roles relating to data administration as outlined by DOD Directive 8320.1.
DOD/Joint Staff	Director of Logistics/J4	Responsible for joint doctrine development to include supply chain management and asset/intransit visibility. The J4 is responsible for the 'Focused Logistics Campaign Plan" in support of Joint Vision 2020.
DOD	Defense Logistics Agency (DLA)	Primary DOD manger of repair parts and operator of defense storage and distribution depots. Included is the Federal Cataloging mission for all services and the DOD interface to outside agencies. DLA runs the Defense Logistics Management Standards Office (DLMSO) responsible for, "Maintaining capability to communicate standard logistics information requirements while expanding support to new initiatives."[24] The Business Systems Modernization Program is delivering an ERP solution to DLA business practices.[25]
Army	Assistant Secretary of the Army (Acquisition, Logistics and Technology) Director for Integrated Logistics	Develops life cycle logistics support policy and concepts used by materiel developers. Includes documentation and logistics data early in the life cycle as outlined in AR 700-127, Integrated Logistics Support. Logistics data on system performance needed to improve system performance over the life cycle are concerns for this office.
Army	Headquarters, Department of the Army Deputy Chief of Staff for Logistics, G4	Primary functional policy manager for the Army and directs resources for functional data requirements. The Director of Sustainment develops policy, guidance, and supports resourcing of key Army functional logistics programs and logistics information systems. The Logistics Transformation Agency (LTA) is a Field Operating Activity (FOA) of the G4.
Army	Headquarters, Department of the Army Deputy Chief Information Officer (CIO), G6	Responsible for the Army Technical Architecture, integration of Army systems, compliance with the Joint Technical Architecture, and development of the Army Enterprise of which the Logistics Enterprise is a subset. Ensures functional system managers are complying with data administration and management as laid out in AR 25-1, Army Information Management
Army	Training and Doctrine Command, Combined Arms Support Command (CASCOM)	The combat developer for functional logistics requirements and doctrine; and information system requirements in support of field level logistics.
Army	Program Executive Office for Enterprise Information Systems (PEO EIS)	Provides technical development and management of Army enterprise information systems through its Project/Product Managers. PM LIS serves as the materiel developer of logistics systems for CASCOM

		developed requirements, PM Joint Computer-Aided Acquisition and Logistic Support (JCALS) for weapon system acquisition and logistics support data (e.g.-electronic technical manuals and interactive electronic technical manuals), and PM Transportation Information Systems (TIS) for transportation data and links to the Defense Transportation System managed by the U.S. Transportation Command (TRANSCOM).
Army	US Army Materiel Command (AMC)	The AMC G3 works with HQDA G-4, CASCOM, PEO EIS, and others to integrate and modernize the Army logistics automation environment. Designated as the Deputy for Army Logistics Enterprise Integration (DALEI), the AMC Deputy G-3 serves as the senior level advisor to the Commanding General, AMC for enterprise integration of Army logistics automation and Business Process Reengineering.[26] Three key activities are: ▪ Lead AMC Integrated Support Office (LAISO) responsible for AMC functional support to Army, DOD, and other service/agency logistics initiatives. ▪ Communications-Electronics Command (CECOM) developing and sustaining national level systems (e.g.- CCSS and LMP). ▪ Logistics Support Activity (LOGSA) collecting, integrating and distributing tactical and national level logistics data across the Army; operating the Logistics Integrated Data Base (LIDB) and chairing the Army Data Integrity Working Group.

TABLE 3 KEY PLAYERS AND ROLES IN THE ARMY LOGISTICS ENTERPRISE

Key policy roles are with DOD and Army staffs. Requirements development and integration roles are with TRADOC (CASCOM) for tactical requirements and AMC for national and enterprise integration requirements. The DLA, PEO EIS, and AMC are system developers, sustainers, and operators providing daily support within the enterprise. Of special note is the unique role of AMC with the DALEI, LAISO, and LOGSA. These activities are providing support and interacting daily at the strategic, operational and tactical levels of DOD and the Army.

The services, DLA, and TRANSCOM are independently developing technical solutions to meet evolving functional requirements to improve logistics business efficiencies and improve support to the combatant commander. Within the Army, independent efforts are underway to replace the legacy national systems (e.g. - CCSS, SDS) and the legacy tactical systems (e.g. - SARSS, SPBS, SAMS, ULLS). The DLA has deployed its initial release of Business Systems Modernization to replace legacy systems and logistics business processes. The TRANSCOM is

developing and deploying improved transportation management systems. The systems must have common logistics data to support an enterprise system yet their business processes may not support a defense enterprise requirement. For example, property accountability must use common values and include serial number accountability, a common process at the unit property book level and managed by UIC/DODAAC; but, not common at the national level who manages by stock location and quantity. The enterprise must have common elements and processes to meet serial number accountability requirements in the system. Transportation information, to support both in transit visibility, asset visibility, and serial number visibility (especially for weapons) must reach across platforms and processes with common data and information.

These developments are driving the need for a single functional data manager with the appropriate authority to direct Army logistics process actions. The single logistics functional data manager would work with logistics systems developers to insure that we have master data management standardizing data element names and definitions across systems. Cleansing bad data and data quality problems can be directed and monitored as the new capabilities are developed and deployed while assigning and tracking of the authoritative source for data elements that cross all systems. Expected benefits of improved functional data integration are improved logistics support and logistics information flow to the combatant commander and improved common logistics processes across the DOD. Combatant commander queries for information and metrics (e.g.- asset visibility, wait times, inbound flow, maintenance and readiness of equipment) will be answered by the single logistics enterprise with authoritative sources providing replies. Data passed up the system can be transitioned to actionable information that will allow national level managers to be responsive to field issues and predictive in making support decisions. Workload management improved, especially within the distribution system, as requirements and materiel flows will be more visible and managers can take actions early. National level logistics managers will have increased visibility over field requirements and materiel flows allowing improved management of stockage points, stockage levels, maintenance programs, and retrograde management. Improved cross-service visibility and support can occur within the theater to allow better visibility and improved readiness.

 ARMY FUNCTIONAL LOGISTICS DATA MANAGEMENT

The Army has gaps to bridge in meeting future functional data management needs. Army Audit Agency audits have identified data elements within disparate Army logistics data

management systems where each system claims to be the Army authoritative source yet has different data (e.g.-WOLF/Maintenance mentioned earlier) and different data warehouses exist with different data values.[27] Congressionally driven requirements in support of Chief Financial Officer reporting get different answers to the same question for asset balances and valuations of National Defense Equipment because of data quality issues and different 'accountable' sources. These are examples of where the Army must satisfy emerging requirements and capabilities (e.g. – serial number tracking) which cannot be met with different 'accountable' sources and records; and different values required by different systems. The "Single Army Logistics Enterprise" study been completed for AMC and outlines key decisions and actions for a single functional data manager to drive solutions.[28] The authority to direct actions and provide oversight on all logistics systems development is needed to move forward with this concept. Data cleansing would be managed and directed to prevent bad data being inserted into the system; and lead activities identified and actions tracked for resolving existing or developing data quality issues.

There are several alternatives to meeting the need of functional data management and achieving functional objectives. It would be in the best interests of the Army for training, system development, and overall business efficiency to have a current process owner with Army and Joint experience fill this role

The status quo will allow each system to develop, identify, and manage their own data while centrally managing a select set of logistics management data common to all services and DLA (i.e.- cataloging FEDLOG data and HAZMAT data). Nothing would be gained by selecting this alternative and it would not support the objectives for the FLE, Focused Logistics Campaign Plan, Transformation, or Army process improvements.

A HQDA staff element could take the role. This violates the role of the staff as being the policy proponent and places them in functional management role better suited for a field activity. The LTA has been divesting itself of roles to allow it to concentrate on Transformation. The TRADOC, it could take on the role in addition to its combat developer role. This solution is not optimal and would require TRADOC to take on roles now outside of its assigned missions and responsibilities. The same is for Forces Command or another major command that manages and provides forces for the combatant commanders (e.g. – USAREUR or USARPAC).

The AMC has limited roles today and could expand its scope of duties based upon guidance from the Army Vice Chief of Staff (VCSA) and Chief of Staff. The VCSA assigned the AMC Commanding General as lead systems manager for developing Army logistics systems in June 2000. In July 2003, AMC was given the Army Logistics Enterprise Integration

responsibilities and the AMC Deputy G3 for Enterprise Integration was named the Deputy for Army Logistics Enterprise Integration (DALEI). Primary support is to Transformation and the Future Force recognizing the need for integration of the many functional managers requirements.[29] AMC, as the principal sustainer for the Army, receives, integrates, and manages logistics data from Program Executive Offices and subordinate PMs during the weapon system's life cycle.

THE SOLUTION TO FUNCTIONAL MANAGEMENT OF LOGISTICS DATA

Functional management of logistics data is critical to leverage emerging technologies and the developing DOD and Army logistics enterprises. The enterprises will balance efficiency and effectiveness of logistics business processes to meet the capability requirements of the combatant commanders. Technology will allow the timely movement of data and information across the enterprise. Success will be the integration of these two areas into a capability providing real time actionable information and that information will depend on clear data definitions, valid data values, and correct relationships when answering queries or providing metrics. Getting functional management of logistics data wrong can mean the failure (or at least the impairment) of emerging logistics systems and initiatives.

Functional management of logistics data is at a critical decision point for the Army and must be decided as the new DOD and Army logistics enterprise is developed and deployed over the next 5-7 years. Returns on assigning management to a single agency will be integration of cleansed valid data providing single authoritative answers and information. The enterprise will meet requirements of combatant commanders for timely, relevant, and actionable logistics information and support proactive logistics enterprise processes.

The developers of emerging logistics systems within the Army Logistics Enterprise are AMC and PEO EIS with each developing its specific area of national logistics systems and tactical systems respectively. Additional roles assigned to AMC include the lead system manager for the Army Logistics Enterprise and logistics enterprise integration responsibilities for the Future Force. AMC is the developer for the Logistics Modernization Program and owner of the Logistics Integrated Data Base – serving as the national level data manager, national level data warehouse of retail and tactical data, and interface to external agencies and other services. AMC presently manages the Army Total Asset Visibility capability providing authoritative data to JTAV, DLA, and combatant commanders while also chairing and managing the Army Logistics Data Quality Management Working Group.

AMC is best suited to serve as the Army functional manger of logistics data as it has functional data management roles beyond the day-to-day data processing roles. The modernized ERP software and processes under LMP serve as a master database and AMC personnel have learned how to manage master data and dynamic data in an enterprise. AMC personnel represent the Army to other services and DOD working groups – all of which have data management roles across DOD. The VCSA assignment as the lead systems manager can be expanded to include this new role for AMC.

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ENDNOTES

[1] Data is defined in Joint Chiefs of Staff Publication 1 as, "representation of facts, concepts, or instructions in a formalized manner which is suitable for communication, interpretation, or processing by humans or by automatic means. Any representations such as characters or analog quantities to which meaning is, or might be, assigned."

Data administration roles are outlined in DOD Directive 8320.1, *DOD Data Administration* and further defined for the Army AR 25-1, *Army Information Management*. The Army Data Management Program, as outlined in AR 25-1, "Establishes information about the set of data standards, business rules, and data models required to govern the definition, production, storage, ownership, and replication of data."

[2] Daniel Parker, "MDM Army Logistics Enterprise," briefing slides, Redstone Arsenal, USAMC Logistics Support Activity, 12 Jan 2004.

[3] Freddie L. Martin <freddie.martin@logsa.redstone.army.mil>, "Facts for my Paper, " electronic mail message to Daniel Rhodes <daniel.rhodes1@us.army.mil>, 4 December 2003. The Army Master Data File is an extract from the Army Central Logistics Data Bank (ACLDB). Within the ACLDB, there are 88 common data elements across DOD and 50 data elements unique to the Army for a total of 138 logistics management data elements. The 88 common data elements are incorporated in to the Federal Logistics Information System.

[4] Department of Defense, *DoD Data Administration,* Department of Defense Directive 8320.1 (Washington, D.C.: U.S. Department of Defense, September 26, 1991), 3.

[5] Donald J, Bowersox, David J. Closs and Theodore P. Stank. *21st Century Logistics: Making Supply Chain Integration Reality,* (<where>, Council of Logistics Management, 1999). This book provided the background information and an understanding of Supply Chain Management.

[6] Mark Y.D. Wang and James A. Champy, *Accelerated Logistics: Streamlining the Army's Supply Chain* (Santa Monica: RAND MR-1140-A, 2000).

[7] James P. Bienlien, et al., *Handbook for Army Logistics Automation, 3rd Edition,* (McLlean, VA: Logistics Management Institute, 1998). The Handbook is the source of data for systems information in both Table 1 and Table 2 for legacy automated information systems is unless otherwise cited in the notes.

[8] "LMP Program Overview, " available from <http://www.wlmp.com>; Internet; accessed . 4 February 2004.

[9] "Project Manager Global Combat Support System – Army (GCSS-A)," available from <https://my.eis.army.mil/pws/index3.htm>; Internet; accessed 4 February 2004.

[10] "Business Systems Modernization," available from <http://www.dla.mil/j-6/bsm>; Internet; accessed 4 February 2004. The DLA Business System Modernization (BSM) is the enterprise resource planning solution for the Defense Logistics Agency and cuts across organizational boundaries and business processes in the agency. Additional information is available at the BSM homepage.

[11] : Fact Sheet: Financial and Logistical Interface Program," available from <http://www.forscom.army.mil/g4/FINLOG.htm>; Internet; accessed 4 February 2004.

[12] "Common Transitional Enterprise System – Aviation", briefing slides, Redstone Arsenal, Program Executive Office for Aviation, May 2003.

[13] U.S. Army Audit Agency, *Work Order Logistics File: Maintenance Data Integration* (Washington D.C.: U.S. Army Audit Agency, May 2003). This report identified the various maintenance system developers and requirements agencies each with their own vision and competing data storage and integration plans, and a lack of agreements between maintenance system owners today on sharing data, integrating processes, or defining roles and responsibilities.

[14] Daniel Parker, "MDM Army Logistics Enterprise," briefing slides, Redstone Arsenal, USAMC Logistics Support Activity, 12 Jan 2004.

[15] Daniel Parker, "MDM Army Logistics Enterprise," briefing slides, Redstone Arsenal, USAMC Logistics Support Activity, 12 Jan 2004.

[16] Daniel Lyons, "Back on the Chain Gang," *Forbes,* 13 October 2003, 114-123. Also, the final billion in savings was accomplished by using more common parts in manufacturing and relocating manufacturing sites.

[17] Joint Chiefs of Staff, *Joint Doctrine for Global Distribution,* Joint Pub 4-09 (Washington, D.C.: U.S. Joint Chiefs of Staff, 14 December 2001), I-9.

[18] Diane K. Morales, *"Future Logistics Enterprise: The Way Ahead,"* (Washington D.C.: U.S. Department of Defense, June 2002), 4. The Future Logistics Enterprise has been renamed the Force-centric Logistics Enterprise

[19] Ibid. The Joint Logistics Board consists of the Service Materiel Command Commanders, senior Service staff Logisticians, The Joint Staff Director of Logistics, the Deputy Commander of U.S. Transportation Command, and the Director, Defense Logistics Agency.

[20] The Commander, U.S.TRANSCOM was assigned the role as the DOD Distribution Process Owner on 25 Sep 2003.

[21] "LMP Program Overview, " available from <http://www.wlmp.com>; Internet; accessed . 4 February 2004.

[22] "Project Manager Global Combat Support System – Army (GCSS-A)," available from <https://my.eis.army.mil/pws/index3.htm>; Internet; accessed 4 February 2004.

[23] USAMC Logistics Support Activity, *A Guide for Soldiers,* LOGSA PAM 700-1 (Redstone Arsenal: U.S. Army Materiel Command Logistics Support Activity, 10 April 2002), 2. Basic LIDB information is at page two of this document with other information in the document. The LOGSA PAM 700-1, *A Guide for Soldiers,* is available electronically at <http://www.logsa.army.mil/pubs.htm>

[24] "Welcome to the Defense Logistics Management Standards Office," available from <http://www.dla.mil/j-6/dlmso/>; Internet; accessed 27 Dec 2003.

[25] "Business Systems Modernization," available from <http://www.dla.mil/j-6/bsm>; Internet; accessed 4 February 2004.

[26] "Enterprise Integration", available from <http://www.amc.army.mil/G3/org/e/e.htm>; Internet; accessed 11 Feb 2004.

[27] U.S. Army Audit Agency, Ibid.

[28] U.S. Army Materiel Command, "*Single Army Logistics Enterprise: Overall Army Logistics Enterprise Solution Report – Final,"* (Alexandria, VA: U.S. Army Materiel Command. March 2003). This is a comprehensive and thorough report that outlines the Army Logistics Architecture and Enterprise to include actions to institutionalize the actions and architecture laid out in the plan.

[29] Acting Chief of Staff John M. Keane and Acting Secretary of the Army R.L. Brownlee, "Army Knowledge Management (AKM) Guidance Memorandum Number 4 – Army Logistics Enterprise Integration," memorandum for Army Staff, Army Commanders, and Program Executive Officers, Washington, D.C., 15 July 2003. This memorandum directs the CG, AMC to establish an Executive Steering Committee to standardize and guide Army logistics processes and provides additional direction and authority for the DALEI in managing the Army Logistics Enterprise, to include major command and PEO initiatives and programs.

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